

Amendment and Response  
Applicants: Lars Björck et al.  
Serial Number: 09/869,677

Attorney Docket: KCO1004US

### REMARKS

Claims 1 to 12 were pending in this application, and claims 4 to 9 were withdrawn from consideration as directed to a non-elected invention. Claims 1 and 2 were amended above and claim 12 was cancelled. Claims 1 to 3, 10, and 11 are pending and under consideration.

On pages two to five of the May 23, 2003 Office Action, the Examiner rejected claims 1 to 3 and 10 to 12 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter Applicants regard as the invention. Applicants respectfully traverse this rejection of the claims.

The Examiner rejected claims 1 and 2 for reciting SEQ ID NO:1, which is a nucleotide sequence, instead of SEQ ID NO:2, which is an amino acid sequence. Claims 1 and 2 have been amended to recite SEQ ID NO:2.

The Examiner rejected claims 1 and 2 as vague and indefinite for not reciting that the polypeptide is isolated and purified. Claims 1 and 2 have been amended to recite that the polypeptide is isolated and purified.

The Examiner rejected claims 1 and 2 as vague and indefinite for reciting the term "variant". Claims 1 and 2 have been amended to recite that the variant of the amino acid of SEQ ID NO:2 has at least 95% identity thereto. Support for this amendment can be found in the specification at page 6, lines 21 to 24. The term "variant", as amended, is not vague and indefinite.

The Examiner rejected claim 1, part (b), as vague and indefinite for reciting "an anti-MtsA antibody". Claim 1 has been amended to recite "an antibody which binds specifically to a MtsA polypeptide having the amino acid sequence of SEQ ID NO: 2". Thus, the term "anti" has been deleted and the term "MtsA" has been clarified by defining it as a MtsA polypeptide having the amino acid sequence of SEQ ID NO: 2. It is submitted that the claims are now clear and complete and that

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the rejection made in the paragraph bridging pages three and four of the Office Action should now be overcome.

In response to the Examiner's rejection in paragraph two on page four of the Office Action, the term "capable of binding" has been replaced with "which specifically binds", as suggested by the Examiner. The phrase "capable of generating" has also been replaced with "generates".

Finally, in response to the rejection raised in the paragraph bridging pages four and five of the Office Action, claim 12 has been deleted. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of the claims under 35 U.S.C. § 112, second paragraph.

The Examiner rejected claims 1 to 3 and 10 to 12 under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and use the invention.

Applicants respectfully traverse this rejection of the claims. Applicants have amended claims 1 and 2 to refer to variants of SEQ ID NO: 2 which have at least 95% identity thereto and which are further defined functionally. It is submitted that the claims as amended comply with 35 U.S.C. § 112, first paragraph.

Claim 1 previously on file covered all variants of SEQ ID NO:1 which are capable of binding an anti-MtsA antibody. The claim has now been amended to recite those variants of SEQ ID NO:2 which have at least 95% identity to SEQ ID NO:2 and which specifically bind to an anti-MtsA antibody. Similarly, claim 2 now recites variants which have at least 95% identity to SEQ ID NO:2 and which are capable of generating an immune response against a Streptococcus. Such recitations cover a clearly defined genus of polypeptides. The skilled person

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would easily be able to test the variants now claimed for their effect in binding the anti-MtsA antibody or in generating an immune response against a Streptococcus.

Regarding the rejection relating to the vaccine compositions and methods of vaccinating, Applicants wish to maintain the claims that are on file. The skilled person would readily be able to test peptides which fall within the scope of claim 2 for their ability to generate an immunoprotective response in an animal. For instance, test animals could be immunized with candidate peptides and then challenged with Streptococcus to test the bactericidal effect. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of the claims under 35 U.S.C. § 112, first paragraph.

*need proof*

The Examiner rejected claims 1 to 3 and 10 to 12 under 35 U.S.C. § 102(b) as anticipated by Russell et al. (U.S. Patent No. 5,422,427) or its equivalent (WO 93/10238). The Examiner states that Russell et al. teaches a protein fragment from Streptococcus which is identical to fragment 181 to 208 of Applicants' SEQ ID NO:2, i.e., 28 amino acids in length.

Applicants respectfully traverse this rejection of the claims. The claims have been amended to recite fragments that are at least 60 amino acids in length. Russell et al. does not teach or suggest the claimed fragments. Accordingly, Applicants respectfully request that the Examiner withdraw this rejection of the claims.

The Examiner rejected claims 1 to 3 and 10 to 12 under 35 U.S.C. § 102(b) as anticipated by Sampson et al. (U.S. Patent No. 5,854,416). The Examiner states that Sampson et al. teaches an isolated polypeptide which is 80% identical to Applicants' SEQ ID NO:2 and therefore can be considered a variant of SEQ ID NO:2. The Examiner states that Sampson et al. teaches that fragments of the 80% identical protein that are at least 10 amino acids in length can be used as vaccines

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and that several fragments of the protein are identical to the 6 amino acid length fragments of Applicants' SEQ ID NO:2.

Applicants respectfully traverse this rejection of the claims. The claims have been amended to recite that the variant has at least 95% identity to the amino acid having SEQ ID NO:2 and that the fragments are at least 60 amino acids in length. Sampson et al. does not teach or suggest the claimed variants and fragments. Accordingly, Applicants respectfully request that the Examiner withdraw this rejection of the claims.

The Examiner rejected claims 1 to 3 under 35 U.S.C. § 102(b) as anticipated by Ganeshkumar et al. (Infect. Immun., 59:1093-1099 (1991)). The Examiner states that Ganeshkumar et al. teaches a protein fragment from *Streptococcus* which is identical to fragment 111 to 130 of Applicants' SEQ ID NO:2, i.e., 20 amino acids in length.

Applicants respectfully traverse this rejection of the claims. The claims have been amended to recite fragments that are at least 60 amino acids in length. Ganeshkumar et al. does not teach or suggest the claimed fragments. Accordingly, Applicants respectfully request that the Examiner withdraw this rejection of the claims.

In view of the above amendments and remarks, Applicants respectfully request that the Examiner withdraw the rejections of the claims.

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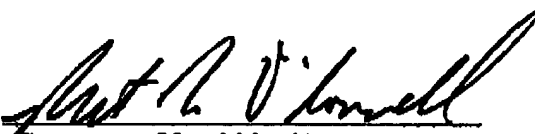
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Respectfully submitted,

Date: September 5, 2003

By



Customer No. 009561

Thomas E. Popovich, Esq. (30,099)

Patrick J. O'Connell, Esq. (33,984)

POPOVICH & WILES, P.A.

IDS Center, Suite 1902

80 South 8th Street

Minneapolis, MN 55402

Telephone: (612) 334-8989

Attorneys for Applicants